

REMARKS

Applicants have carefully considered the positions of the Examiner and respectfully request reconsideration based upon the manifest differences between the claimed invention and the cited references. Initially, applicants thank the Examiner for pointing out the typo in claim 7 and have amended it accordingly. Next, applicants have amended claims 4-9, 12, 16-17, 19-20 and 25-28 and canceled claims 10 and 13-15. The subject matter of claim 10 was incorporated into claim 4 and the subject matter of claims 13-15 has been incorporated into claim 12. Claims 4-9, 11-12 and 16-28 are presented herein for examination.

I. THE INVENTION

The present invention discloses an intelligent, modular server management system for enabling selective access, control and operation of a plurality of remotely located computers from one or more user workstations. Access is completely independent of the associated computer network. The present invention includes a computer interface module ("CIM") coupled to each remote computer, a matrix switch unit and one or more user stations with a connected keyboard, video display and cursor control device. Further, the matrix switch unit is coupled to each CIM and user station via a first and second connection, respectively. Each CIM is powered by the attached remote computer.

The present invention discloses the bi-directional transmission of keyboard and mouse signals between a local user station and one of the plurality of remotely located computers and the unidirectional transmission of video signals from the remote computer to the local user station. Each user station multiplexes signals output from the keyboard and cursor control

device and provides an interface to the video display. In addition, the present invention allows several users simultaneous access, control and operation of the plurality of remote computers.

Initially, a user at the user station requests connection to a remotely located computer through a user-friendly on-screen interface display. Through this display, the user may easily
5 select and switch among the plurality of remote computers. Upon acceptance of the request from the selected remote computer, the user station packetizes keyboard and/or cursor control device signals and transmits the packetized signals as a data packet (preferably consisting of five (5) bytes) to the matrix switch unit along a single twisted pair of a Category 5 UTP cable. Generally, command data, which comprises identification information of a remote computer, is transmitted
10 on the first byte with length data. Significantly, one byte carries half command and half length data, which advantageously shortens the data packet and thus increases the system's efficiency. The switch unit interprets the command data, emulates the keyboard and/or cursor control device signals and sends the emulated signals to the selected remotely located computer.

Simultaneously, video signals are transmitted from the remotely located computer
15 through the CIM to the matrix switch unit, which subsequently routes the video signals to the appropriate local user station. Horizontal and vertical synchronization signals are preferably encoded and transmitted separately with one of the components of the video signals (i.e., horizontal sync signals with green and vertical sync signals with blue). The present invention uses the encoded synchronization signals to enable automatic tuning of the video signals. That
20 is, the present invention discloses circuitry located at the user station to automatically amplify the amplitude and frequency components of the video signals and analyze the synchronization signals to determine the proper level of amplification necessary. The amplification of the

frequency is determined based upon the shape of the synchronization signal. In this manner, the present invention enables efficient transmission of video signals from the remote computer to the user station thereby allowing a user at the user station to efficiently access, control and operate the remote computer.

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II. THE EXAMINER'S REJECTIONS

In the Office Action dated January 10, 2005, the Examiner rejected claims 4-28 under 35 U.S.C. § 103(a) as being unpatentable over Dickens *et al.* U.S. Patent No. 6,618,774 ("Dickens"), in view of Thomas *et al.* U.S. Patent No. 6,671,756 ("Thomas").

10 In the opinion of the Examiner, Dickens discloses the present invention substantially as claimed, including:

15 "a user interface for multiplexing signals output from a connected keyboard and cursor control device and for providing an interface to a video display [101, Figure 1; and col 15, lines 34-45]; switch unit coupled to said user interface device by a single first connection [100, Figure 1; and col 15, lines 7-10]; and each of said computer interface modules coupled to at least one of said remotely located computers [103, Figure 1; and col 15, lines 21-34]; wherein said video signals output from said remotely located computers are transmitted to said video display via said switch unit [104, Figure 1; and col 15, lines 34-37]; wherein said user interface device transmits signals from said keyboard and cursor control device to said switch unit [107-111, Figure 1; and col 15, lines 28-34 and lines 55-62]; and wherein said switch unit interprets said keyboard and said cursor control device signals, generates emulated keyboard and cursor control device signals and transmits said emulated keyboard and cursor control device signals to a selected one of said remotely located computers [Figure 2; and col 17, lines 27-25 col 18, lines 19]."

The Examiner admits that "Dickens does not specifically disclose a switch unit for enabling communication between said user interface and a plurality of remotely located computers; and a plurality of computer interface modules each coupled to said switch unit

by a single second connection.” However, according to the Examiner, Thomas discloses

“a switch unit for enabling communication between said user interface device and a plurality of remotely located computers [2, 13, Figure 1], and a plurality of computer interface modules each computer to said switch unit by a single second connection [2, Figure 1; and col 27, lines 23-col 28, lines 3].”

Further, the Examiner opines it would have been obvious to one of skill in the art to combine the teachings of Dickens and Thomas “because Thomas’ teaching of plurality of remotely located computers would allow to provide the ability for system administrators to control multiple computers remotely so that maintenance time can be reduced and increase productivity.”

III. THE EXAMINER'S REJECTIONS SHOULD BE RECONSIDERED AND WITHDRAWN

The Examiner rejected claims 4-28 under 35 U.S.C. § 103(a) as being unpatentable over Dickens in view of Thomas. In rejecting claims 4-28, the Examiner opines that it would have been obvious to one of skill in the art to combine the teachings of Dickens and Thomas. Applicants respectfully disagree. Applicants further submit that even if the combination of Dickens and Thomas were proper, such combination does not teach the present invention as more clearly defined by the amended claims.

Briefly, Dickens discloses a computer signal transmission system for transmitting video and audio signals via a twisted pair cable. The system taught by Dickens includes a computer interface and peripheral interface connected by the twisted pair cable and teaches enabling a single user remote access to a single set of peripherals. Dickens further teaches the transmission of horizontal and vertical synchronization signals with video signals along three (3) twisted pairs

of wires – a technique well known in the art for minimizing cabling. (See, e.g., Col. 2, lines 1-18). Dickens discloses a technique for compensating for signal degradation by utilizing a combination of user input manual settings and automatic compensation circuitry. (See, e.g., Col. 10, lines 1-37). Such a technique is disclosed as a resistance measurement compensation technique, which measures the resistance between a pair of wires at one end of the cable that are terminated at the other end by a known resistance. Specifically, the resistance measurement is achieved by applying a known voltage and measuring the current flow. (See, e.g., Col. 10, lines 41-52). Utilization of such a technique provides results which must be further compensated by manual tuning.

In the opinion of the Examiner, “Dickens discloses wherein said switch unit interprets said command data.” In direct contradiction, the Examiner also states that “Dickens does not disclose a switch unit for enabling communication between said user interface device and a plurality of remote computers”. Therefore, applicants respectfully submit that it is impossible for Dickens to teach a switch unit that interprets command data as Dickens does not disclose the use of a switch unit. In stark contrast, as is more clearly defined by the amended claims, the present invention discloses an automatic compensation technique that utilizes the encoded synchronization signals transmitted with the video signals to provide the necessary amplification and signal restoration of the transmitted signals. Such a technique enables a fully restored and properly conditioned signal, minimizes the latency experienced during the transmission of such signals and allows for the remote computers and local user stations to be at varying lengths from the switch. Dickens fails to teach such automatic compensation.

Regarding the transmission of keyboard and mouse data, Dickens teaches a user-end

circuit to send keyboard and mouse data using a polling technique. The user-end circuit sends data commands to the computer-end circuit and can either send or receive serial data bytes. (See, e.g., Col. 4, lines 27-45). In the opinion of the Examiner, Dickens discloses a “switch unit coupled to said interface device by a single first connection [100, Figure 1; and col 15, lines 7-10
5]; and... wherein said switch unit interprets keyboard and cursor control device signals, generates emulated keyboard and cursor control device signals and transmits said emulated keyboard and cursor control device signals to a select one of said remotely located computers [Figure 2; and col 17, lines 27-col 18, lines 19].” Applicants disagree. As discussed above, Dickens does not disclose a switch, and thus cannot disclose a switch for the generation of emulated keyboard and
10 cursor control device signals.

In contradistinction, the present invention discloses a system and method wherein the user station packetizes the keyboard and/or cursor control device signals and transmits them in a data packet with command data. The switch receives the packetized data, interprets the data packet, generates emulated keyboard and cursor control device signals and transmits the emulated signals
15 to one of the plurality of remotely located computers depending on the command data received from the user station. Such a design enables an increase in distance between the local user stations and the remote computers, better and more efficient signal transmission and a reduction in cost. By centralizing much of the process, more local user stations and remote computers may be added at a minimal cost increase.

20 Turning next to Thomas, applicants submit that disclosed is a KVM switch including a plurality of computer interfaces and a plurality of workstations connected to a single microprocessor. Specifically, the signals are routed by means of a polling routine and a channel

selector. This routine simply moves signals along the channeled path from their source to destination. More specifically, received data is stored in a buffer and the same data is re-transmitted at a preset interval. The present invention does not employ such a routine. Rather, as is more clearly defined by the amended claimed, the signals generated either at the user interface location or by the remote computer are transmitted to the central processing unit or microcontroller, which reads the received signals and propagates a new, emulated signal to the intended destination. This emulated signal is stronger and therefore able to traverse a greater distance while being less susceptible to loss or distortion.

Finally, applicants submit that the Examiner is misguided when stating that Thomas discloses a plurality of computer interface modules receiving power from a plurality of remote computers (Col. 4, lines 24-28). Thomas does not disclose powering the computer interface modules from the remote computers. Rather, Thomas discloses a “keep-alive” feature – a feature commonly known in the art that enables the remote computers to temporarily power the switch in the event that the switch experiences power loss. In contrast, the present invention discloses the continuous powering of the computer interface modules by the attached remote computers, which effectively eliminates the need for a separate power supply at the remote computer interface.

In view of the foregoing, applicants submit the Examiner’s rejection of claims 4-28 should be reconsidered and withdrawn. Furthermore, even if proper, combining Dickens with Thomas does not teach or suggest applicant’s novel invention. That is, as discussed above, Dickens fails to teach a system and method for enabling a plurality of users to simultaneously access, operate and control a plurality of remotely located computers. Dickens, along with Thomas, also fails to teach a system which utilizes an automatic amplification technique for

signal degradation compensation. Additionally, both Dickens and Thomas fails teach a system that includes a switch unit for receiving keyboard and cursor control device signals, and propagating a new, emulated signal to the intended destination based upon command data transmitted with the signals. Therefore, upon closer review of the cited references, in view of the
5 amendments and remarks made herein above, applicant submits that it will be apparent to the Examiner that his rejection should be reconsidered and withdrawn.

Further, the applicant respectfully points out that, standing on their own, the cited references provide no justification for the combination asserted by the Examiner.

"Obviousness cannot be established by combining the teachings of the prior art to produce the
10 claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so." *ACS Hospital Systems Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original).

The cited references provide no such suggestion or incentive for the combination
15 suggested by the Examiner. Therefore, the obviousness rejection could only be the result of a hindsight view with the benefit of the applicant's specification. However,

"To draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own reconstruction -- an illogical and inappropriate process by which to
20 determine patentability. The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made."
(citations omitted) *Sesonics v. Aerosonic Corp.*, 38 U.S.P.Q. 2d. 1551, 1554 (1996).

25 In addition, the combination advanced by the Examiner is not legally proper – on reconsideration the Examiner will undoubtedly recognize that such a position is merely an

"obvious to try" argument. Dickens is unsuitable for efficiently and effectively enabling multiple users to simultaneously select, access, operate and control a plurality of remotely located computers as taught and claimed for the present invention. Further, Dickens is unsuitable for automatically fully restoring and properly conditioning transmitted signals and allowing the remote computers and local user stations to be at varying lengths from the switch. Nothing in Dickens or Thomas reveal any functional or design choices that could possibly include all of the applicant's invention. Accordingly, the present invention is not obvious and unpatentable over Dickens in view of Thomas. At best it might be obvious to try such a combination. Of course, "obvious to try" is not the standard for obviousness under 35 U.S.C. §103. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 91 (Fed. Cir. 1986).

Under the circumstances, we respectfully submit that the Examiner has succumbed to the "strong temptation to rely on hindsight." *Orthopedic Equipment Co. v. United States*, 702 F.2d 1005, 1012, 217 USPQ 193, 199 (Fed.Cir. 1983):

"It is wrong to use the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claim in suit. Monday morning quarterbacking is quite improper when resolving the question of nonobviousness in a court of law." *Id.*

Applicant submits that the only "motivation" for the Examiner's combination of Dickens and Thomas is provided by the teachings of applicant's own disclosure. No such motivation is provided by the references themselves.

Therefore, as is evidenced by the above amendments and remarks, the present invention, for the first time, discloses a system and method for intelligent modular remote computer management whereby a plurality of users can simultaneously access, operate and control a plurality of remote computers. A system and method such as this is neither taught nor suggested

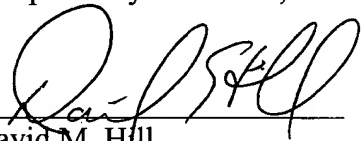
anywhere in the prior art, including Dickens and Thomas.

CONCLUSION

5 In view of the foregoing, applicants respectfully submit that the present invention as claimed in claims 4-9, 11-12 and 16-28 is neither taught nor rendered obvious in view of the cited references and represents a patentable contribution to the art. Applicants submit that the application is now in condition for allowance, and early and favorable action is accordingly solicited.

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Respectfully submitted,


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